

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB2004/050386

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B03B9/00 B03B5/72 B03B5/08 B03B5/26

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B03B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1 123 805 A (H. KAGAN) 28 September 1956 (1956-09-28) the whole document	1-5,9
X	US 1 736 111 A (MALCOLM DAVIDSON THOMAS) 19 November 1929 (1929-11-19) page 3, line 125 - page 4, line 34; figures 1a,3	1,5,9
X	US 682 749 A (J. G. ROBERTS) 17 September 1901 (1901-09-17) page 1, line 50 - page 3, line 121 figure 1	1,5
X	US 4 505 811 A (GRIFFITHS ANTHONY J ET AL) 19 March 1985 (1985-03-19) the whole document	1-9

☐

Further documents are listed in the continuation of box C.

☒

Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

24 June 2004

Date of mailing of the international search report

04. 10. 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Leitner, J

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/050386

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1123805	A	28-09-1956	NONE	
US 1736111	A	19-11-1929	NONE	
US 682749	A		NONE	
US 4505811	A	19-03-1985	AU 2047883 A BR 8305672 A GB 2132117 A	19-04-1984 15-05-1984 04-07-1984

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB2004/050386

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

Method for heavy particle separation including a primary separation stage with the steps of dropping, accumulating, concentrating and discharging of heavy particles and/or a secondary separation with the steps of infeeding, stilling and retaining heavy particles

---

2. claims: 10-22

Heavy particle separation apparatus and method including a concavely shaped, tiltable, transverse belt with a spiral rib for moving material up the transverse belt, and a material feeder and a water spray system above the belt.

---